

Claims

What is claimed is:

1. A process for preserving fresh and processed mushrooms, comprising the steps of:
 - (a) contacting the mushrooms with a first antimicrobial solution comprising electrolyzed basic water having a pH of at least about 9.0;
 - (b) rinsing the mushrooms after said antimicrobial contacting step with a pH-neutralizing solution having a pH sufficient to return the mushrooms to the mushroom physiological pH of about 6.5.
2. The process of claim 1, wherein the neutralizing solution comprises an acidulant selected from the group consisting of ascorbic acid, erythorbic acid, citric acid, fumaric acid and combinations thereof.
3. The process of claim 3, wherein the neutralizing solution comprises the acidulant in the range of 0.1 to 3 percent by weight and the pH of the neutralizing solution is in the range of 2 to 5.5.
4. The process of claim 2, wherein the neutralizing solution comprises a browning inhibitor.
5. The process of claim 4, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.
6. The process of claim 4, wherein the neutralizing solution comprises the browning inhibitor in the range of 1 to 4 percent by weight and the browning inhibitor is selected from the group consisting of ascorbate, erythorbate and a combination thereof.
7. The process of claim 1, wherein the neutralizing solution comprises electrolyzed acidic water.

8. The process of claim 2, wherein the acidulant is fumaric acid and the neutralizing solution further comprises sodium benzoate or benzoic acid.

9. The process of claim 1, said process further comprising the step of:

(c) rinsing the mushrooms with a second pH-neutralizing solution comprising a browning inhibitor.

10. The process of claim 9, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

11. A process for preserving a fresh produce product, comprising the steps of:

(a) contacting the fresh produce product with a first antimicrobial solution comprising electrolyzed basic water having a pH of at least about 9.0;

(b) rinsing the fresh produce products after said antimicrobial contacting step with a pH-neutralizing solution having a pH sufficient to return the surface pH of the fresh produce product to the physiological pH of the fresh produce product.

12. The process of claim 11, wherein the neutralizing solution comprises electrolyzed acidic water.

13. The process of claim 12, wherein the neutralizing solution comprises a browning inhibitor.

14. The process of claim 13, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

15. The process of claim 13, wherein the neutralizing solution comprises the browning inhibitor in the range of 1 to 4 percent by weight and the browning inhibitor is selected from the group consisting of ascorbate, erythorbate and a combination thereof.

16. The process of claim 11, wherein the neutralizing solution comprises an acidulant selected from the group consisting of ascorbic acid, erythorbic acid, citric acid, fumaric acid and combinations thereof.

17. The process of claim 16, wherein the neutralizing solution comprises the acidulant in the range of 0.1 to 3 percent by weight and the pH of the neutralizing solution is in the range of 2 to 5.5.

18. The process of claim 16, wherein the neutralizing solution comprises a browning inhibitor.

19. The process of claim 18, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

20. The process of claim 18, wherein the neutralizing solution comprises the browning inhibitor in the range of 1 to 4 percent by weight and the browning inhibitor is selected from the group consisting of ascorbate, erythorbate and a combination thereof.

21. The process of claim 11, wherein the neutralizing solution further comprises fumaric acid and sodium benzoate.

22. The process of claim 11, said process further comprising the step of :
(c) rinsing the fresh produce product with a second pH-neutralizing solution comprising a browning inhibitor.

23. The process of claim 22, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

24. A process for preserving a fresh produce product, comprising the steps of:
(a) contacting the fresh produce product with a first antimicrobial solution having a pH of at least about 9.0;

(b) rinsing the fresh produce products after said antimicrobial contacting step with a pH-neutralizing solution comprising electrolyzed acidic water having a pH sufficient to return the surface pH of the fresh produce product to the physiological pH of the fresh produce product.

25. The process of claim 24, wherein the neutralizing solution comprises a browning inhibitor.

26. The process of claim 25, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

27. The process of claim 25, wherein the neutralizing solution comprises the browning inhibitor in the range of 1 to 4 percent by weight and the browning inhibitor is selected from the group consisting of ascorbate, erythorbate and a combination thereof.

28. The process of claim 24, said process further comprising the step of :
(c) rinsing the mushrooms with a second pH-neutralizing solution comprising a browning inhibitor.

29. The process of claim 28, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

30. A process for preserving fresh and processed mushrooms, comprising the steps of:
(a) contacting the mushrooms with a first antimicrobial solution having a pH of at least about 9.0;

(b) rinsing the mushrooms after said antimicrobial contacting step with a pH-neutralizing solution having a pH sufficient to return the mushrooms to the mushroom physiological pH of about 6.5 comprising an acidulant selected from the group consisting of citric acid, fumaric acid, benzoic acid and combinations thereof.

31. The process of claim 30, wherein the neutralizing solution comprises a browning inhibitor.
32. The process of claim 31, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.
33. The process of claim 31, wherein the neutralizing solution comprises the browning inhibitor in the range of 1 to 4 percent by weight and the browning inhibitor is selected from the group consisting of ascorbate, erythorbate and a combination thereof.
34. The process of claim 30, wherein the neutralizing solution comprises electrolyzed acidic water.
35. The process of claim 30, said process further comprising the step of :
(c) rinsing the mushrooms with a second pH-neutralizing solution comprising a browning inhibitor.
36. The process of claim 35, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.
37. The process of claim 30, wherein the first pH-neutralizing solution comprises 1 to 50 ppm chlorine dioxide.
38. The process of claim 35, wherein the first pH-neutralizing solution comprises 1 to 50 ppm chlorine dioxide.
39. A process for preserving fresh and processed mushrooms, comprising the steps of:
(a) contacting the mushrooms with a first antimicrobial solution having a pH of at least about 9.0;

(b) rinsing the mushrooms after said antimicrobial contacting step with a pH-neutralizing solution having a pH sufficient to return the mushrooms to the mushroom physiological pH of about 6.5 comprising fumaric acid and sodium benzoate; and

(c) rinsing the mushrooms with a second pH neutralizing solution comprising a browning inhibitor.

40. The process of claim 39, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

41. The process of claim 39, wherein the neutralizing solution of step (c) comprises the browning inhibitor in the range of 1 to 4 percent by weight and the browning inhibitor is selected from the group consisting of ascorbate, erythorbate and a combination thereof.

42. A process for preserving fresh and processed mushrooms, comprising the steps of:
(a) contacting the mushrooms with a first antimicrobial solution having a pH of at least about 9.0;

(b) rinsing the mushrooms after said antimicrobial contacting step with a pH-neutralizing solution comprising ozonated water.

43. The process of claim 42, further comprising the step of:

(c) rinsing the mushrooms with a second pH neutralizing solution comprising a browning inhibitor.

44. The process of claim 43, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

45. The process of claim 44, wherein the neutralizing solution of step (c) comprises the browning inhibitor in the range of 1 to 4 percent by weight and the browning inhibitor is selected from the group consisting of ascorbate, erythorbate and a combination thereof.

46. A process for preserving fresh and processed mushrooms, comprising the steps of:

(a) contacting the mushrooms with a first antimicrobial solution comprising ozonated water; and

(b) rinsing the mushrooms with a neutralizing solution comprising a browning inhibitor.

47. The process of claim 46, wherein the browning inhibitor is selected from the group consisting of ascorbate, erythorbate, EDTA and calcium chloride.

48. The process of claim 47, wherein the neutralizing solution of step (c) comprises the browning inhibitor in the range of 1 to 4 percent by weight and the browning inhibitor is selected from the group consisting of ascorbate, erythorbate and a combination thereof.

49. A process for preserving fresh and processed mushrooms, comprising the steps of:
(a) contacting the mushrooms with a first antimicrobial solution having a pH of at least about 9.0;

(b) rinsing the mushrooms after said antimicrobial contacting step with a pH-neutralizing solution having a pH sufficient to return the mushrooms to the mushroom physiological pH of about 6.5 comprising a browning inhibitor and chlorine dioxide.

50. A process for preserving fresh and processed mushrooms, comprising the steps of:
(a) contacting the mushrooms with a first antimicrobial solution having a pH of at least about 9.0;

(b) rinsing the mushrooms after said antimicrobial contacting step with a pH-neutralizing solution having a pH sufficient to return the mushrooms to the mushroom physiological pH of about 6.5; and

(c) rinsing the mushrooms with a second pH neutralizing solution comprising a browning inhibitor and chlorine dioxide.